

# The FDA-cleared and CE marked medical device for the production of L-PRF®



## INTRASPIN®

**Don't be fooled** - Choose a medical device that is FDA-cleared and CE marked for the production of Leukocyte- and Platelet-Rich Fibrin.

- simple & economical<sup>1</sup>
- quality guarantee
- quick, three-step processing protocol
- up to 80% reduction in undesirable vibrations<sup>2</sup>
- high-quality, German engineering and manufacturing



The IntraSpin® System is intended to be used for the safe and rapid preparation of autologous Leukocyte-and Platelet Rich Fibrin (L-PRF) from a small sample of blood taken chairside. The IntraSpin System:

- Offers high-quality, German engineering and manufacturing with a set of proprietary parameters critical for the precise preparation of L-PRF.
- Features an optimized protocol that was scientifically developed and clinically proven from over 200 studies over 10+ years which ensures predictable results.

A simple, three-step, processing protocol includes drawing blood, spinning blood and forming a thin, compressed layer of L-PRF in the Xpression® box. The Intraspin system features specialized instruments designed for completing this processing protocol.

# Benefits of L-PRF<sup>®</sup> in surgical procedures

## SAFE

L-PRF is a 3D, autogenous, platelet-rich fibrin derived from the patient's own blood which reduces the risk of disease transmission, allergic reaction or rejection.<sup>1</sup>

## COST-EFFECTIVE

L-PRF is a chairside procedure with a low per patient cost that enhances your surgical procedures naturally.<sup>1</sup>

## SIMPLE

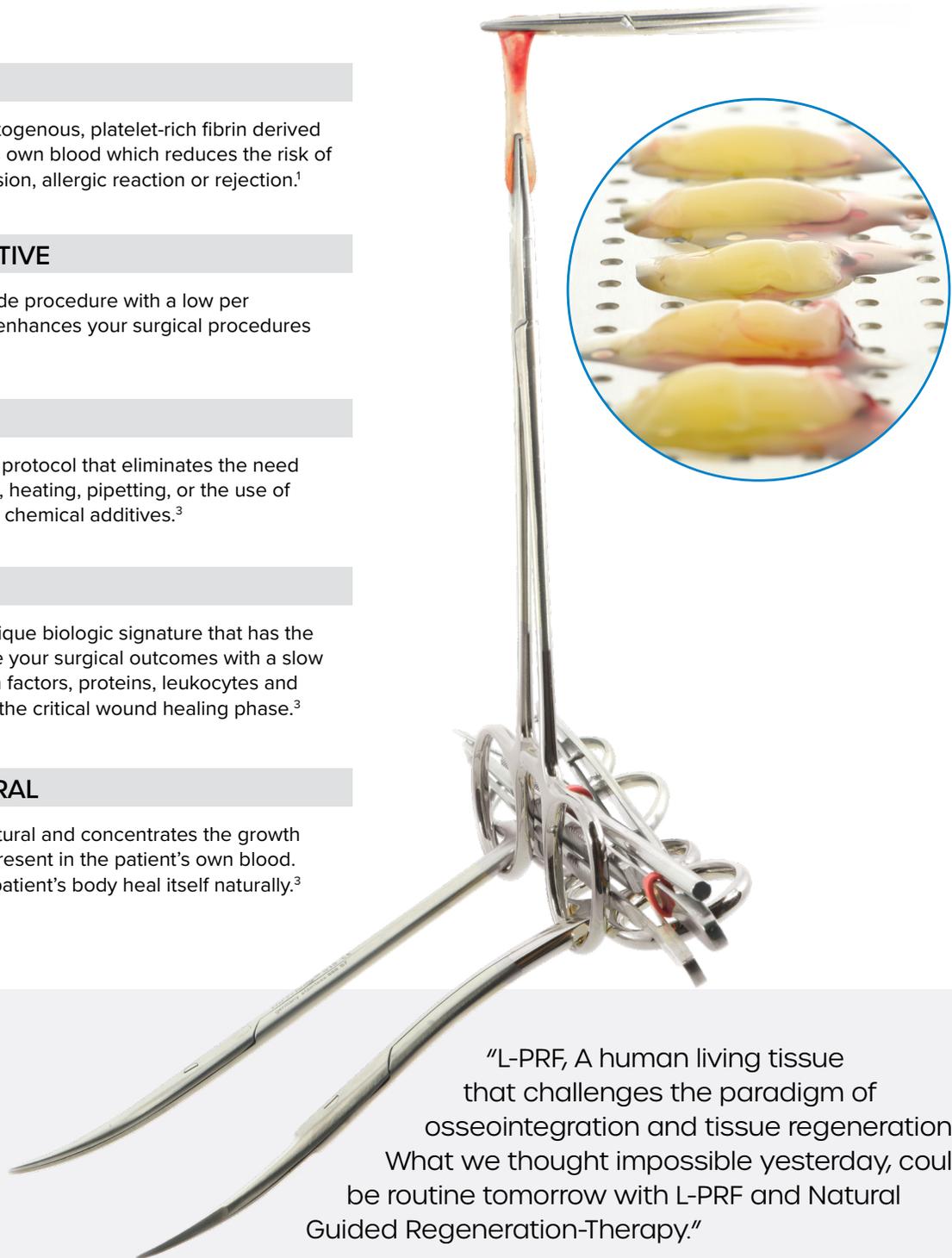
L-PRF is a simple protocol that eliminates the need for a second spin, heating, pipetting, or the use of anticoagulants or chemical additives.<sup>3</sup>

## UNIQUE

L-PRF offers a unique biologic signature that has the ability to enhance your surgical outcomes with a slow release of growth factors, proteins, leukocytes and cytokines during the critical wound healing phase.<sup>3</sup>

## 100% NATURAL

L-PRF is 100% natural and concentrates the growth factors that are present in the patient's own blood. L-PRF helps the patient's body heal itself naturally.<sup>3</sup>

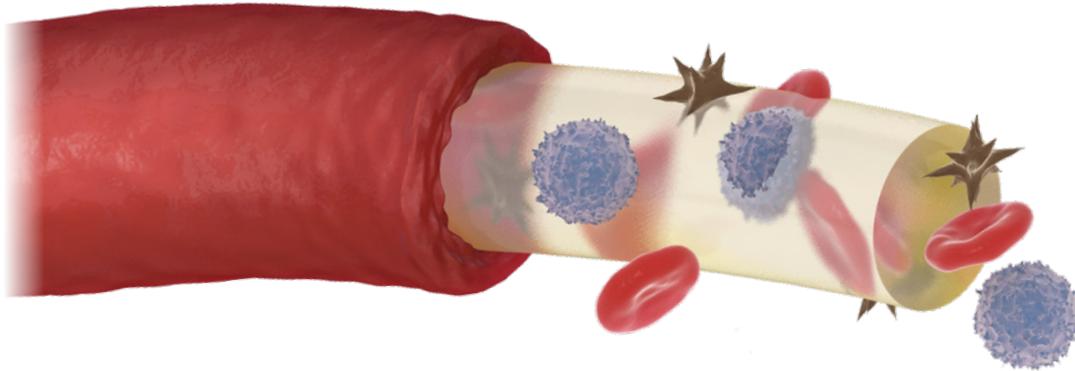


“L-PRF, A human living tissue that challenges the paradigm of osseointegration and tissue regeneration. What we thought impossible yesterday, could be routine tomorrow with L-PRF and Natural Guided Regeneration-Therapy.”

*Images courtesy of Dr. Iñaki Gamborena (Spain)*

**Dr. Nelson Pinto**

# What is Leukocyte- & Platelet-Rich Fibrin (L-PRF)?



L-PRF is a 3D autogenous combination of platelets, growth factors, proteins, leukocytes and cytokines incorporated into a natural fibrin network derived from the patient's blood.<sup>1</sup>

A simplified chairside procedure results in the production of a thin, compressed layer of Leukocyte- and Platelet-Rich Fibrin that is strong, pliable and suitable for suturing. Clinically, L-PRF displays excellent working properties including the ability to be cut to size and supple enough to adapt to many anatomical areas.

The unique biologic signature of L-PRF has demonstrated twice the strength, larger clots/membranes and a more intense release of growth factors when compared to A-PRF. L-PRF offers a slow release of growth factors for more than 7 days during the critical wound healing phase<sup>2</sup>.

## Ordering Information

The IntraSpin system components are FDA-cleared and CE marked and are optimized to ensure proper material biocompatibility and clinical performance.

### IntraSpin® Centrifuge

The IntraSpin Centrifuge has a specific configuration and proprietary set of parameters. It has been calibrated and tested to ensure consistent separation of the blood into its proper segments for L-PRF.



#### Product Description

Ref. No.

IntraSpin System, 110 volts Procedure Pack  
Includes IntraSpin Centrifuge, Tissue Regeneration Kit & Blood Collection System.

LPRF110

IntraSpin System, 220 volts Procedure Pack  
Includes IntraSpin Centrifuge, Tissue Regeneration Kit & Blood Collection System.

LPRF220

**Tissue Regeneration Kit**

The Tissue Regeneration Kit includes the Xpression® box which is engineered to optimize the final step in the fabrication of Leukocyte-and Platelet-Rich Fibrin. The weighted press is designed to express serum from the fibrin clot in a controlled manner and to form a thin compressed layer of L-PRF of a consistent thickness. A piston and cylinder assembly is used for the creation of L-PRF plugs. The instrumentation is also designed for mixing graft material into the L-PRF matrix.



Product Description	Ref. No.
Tissue Regeneration Kit <i>(includes all items below)</i>	<b>BDTRKZ</b>
Xpression Box	<b>CTRZ</b>
Surgical Tissue Forceps	<b>BSTFZ</b>
Surgical Curved Scissors	<b>BSCSZ</b>
Dual Biomaterial Carrier Spatula	<b>BDBCZ</b>
Dual Biomaterial Packer	<b>BDBPZ</b>
Round Stainless-Steel Bowl	<b>BSSSMTZ</b>
Rectangular Stainless-Steel Bowl	<b>BRSSMTZ</b>

**Blood Collection System**

The blood sample collection system has been developed for proper biocompatibility, collection and maintenance of the blood sample.



Product Description	Ref. No.
Red Cap 9ml Serum Clot Activator, pack of 50	<b>455092</b>
White Cap 9ml No Additive Blood Collection Tube, pack of 50	<b>455001</b>
Greiner Safety Blood Collection Set + Holder, 21G, box of 24	<b>450160</b>
Medical Tourniquet, latex-free	<b>BAT</b>
Holdex Single Use Holder, box of 100	<b>450241</b>
Test Tube Rack	<b>BRACK</b>

# Key Clinical Study

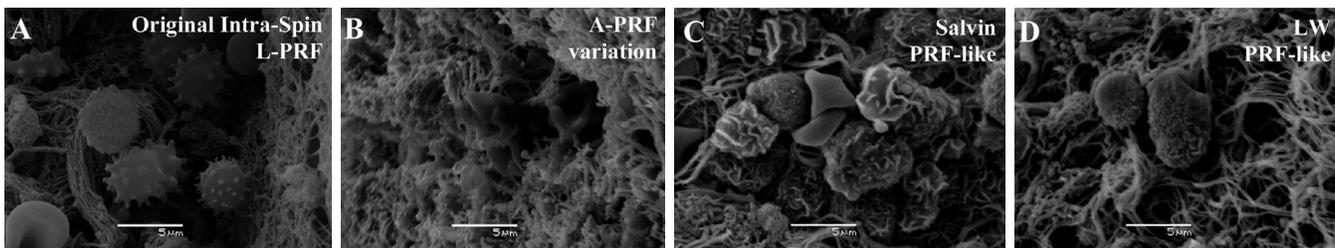
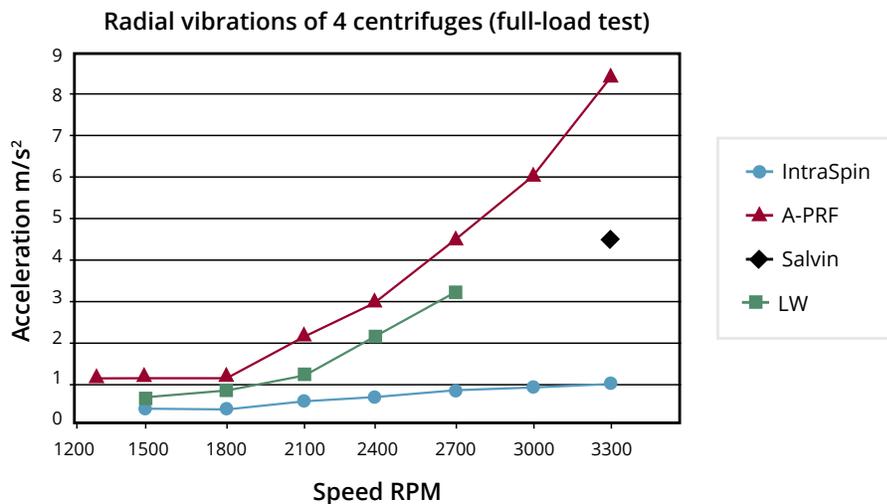
The impact of the centrifuge characteristics and centrifugation protocols on the cells, growth factors, and fibrin architecture of a leukocyte- and platelet-rich fibrin (L-PRF) clot and membrane.

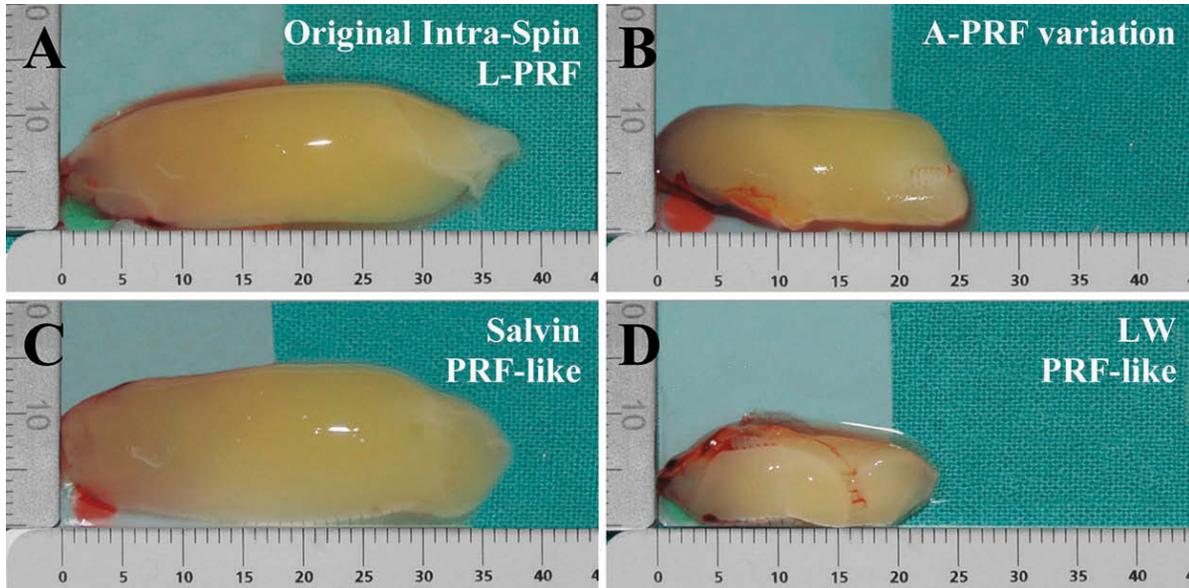
David M. Dohan Ehrenfest, Nelson R. Pinto, Andrea Pereda, Paula Jiménez, Marco Del Corso, Byung-Soo Kang, Mauricio Nally, Nicole Lanata, Hom-Lay Wang & Marc Quirynen

## PURPOSE

The first objective of this study was to evaluate the mechanical vibrations appearing during centrifugation in four models of commercially available table-top centrifuges used to produce L-PRF and the impact of the centrifuge characteristics on the cell and fibrin architecture of a L-PRF clot and membrane.

The second objective of this study was to evaluate how changing some parameters of the L-PRF protocol may influence its biological signature, independently from the characteristics of the centrifuge.





- IntraSpin was by far the most stable machine in all configurations and the level of undesirable vibrations was between 4.5 and 6 times lower than with other centrifuges.
- IntraSpin showed the lowest temperature of the tubes.
- IntraSpin produced the heaviest clot and quantity of exudate among the four techniques.
- IntraSpin L-PRF showed a strongly polymerized thick fibrin matrix and all cells appeared alive with a normal shape, including the textured surface aspect of activated lymphocytes.
- IntraSpin L-PRF membranes were significantly stronger (more than twice) and demonstrated a slow release of BMP2 during at least 7 days.

## CONCLUSIONS

The centrifuge characteristics and centrifugation protocols impact significantly and dramatically the cells, growth factors and fibrin architecture of L-PRF.

Each centrifuge has its clear own profile of vibrations depending on the rotational speed, and the centrifuge characteristics are directly impacting the architecture and cell content of a L-PRF clot.

When using the same centrifuge, the original L-PRF protocol produced larger clots/membranes and a more intense release of growth factors (biological signature at least twice as strong) than the modified A-PRF protocol. Both protocols are therefore significantly different.

1. Three-dimensional architecture and cell composition of a Choukroun's platelet-rich fibrin clot and membrane.  
Dohan Ehrenfest DM, Del Corso M, Diss A, et al. J Periodontal. 2010. Apr; 81(4): 546-55.
2. The impact of the centrifuge characteristics and centrifugation protocols on the cells, growth factors and fibrin architecture of a Leukocyte-and Platelet-Rich Fibrin (L-PRF) clot and membrane. Part 3: comparison of the growth factors content and slow release between the original L-PRF and the modified A-PRF (Advanced Platelet-Rich Fibrin) membranes.  
Dohan Ehrenfest DM, Del Corso M, Kang B, Lanata N, Quirynen M, Wang HL, Pinto N.POSEIDO. 2014, June; 2(2): 155-66.
3. Introducing Choukron's Platelet Rich Fibrin (PRF) to the reconstructive surgery Milieu.  
Michael Toffler, Nicholas Toscano, Dan Holtzclaw, DDS, et al. J Implant & Adv Clin Dent. 2009 Sept; 1(6): 21-32.



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